

WE CLAIM:

1. A convertible soft top for a vehicle, the vehicle having a body with front and rear portions spaced from each other along a longitudinal axis, said front portion having an upstanding windshield and said rear portion having side panels and a rearward panel, said vehicle further having a safety bar arrangement with a portion thereof having an inverted, substantially U-shape with the side legs of said inverted U-shape extending substantially vertically upward from the vehicle body adjacent the rear portion thereof and the base of the inverted U-shape extending between the side legs substantially horizontally across the vehicle body and longitudinal axis adjacent the rear portion of the vehicle body, said convertible soft top including:

a foldable, collapsible frame and a flexible fabric attached thereto, said frame including at least front and rear bow members, each bow member having an inverted, substantially U-shape with side legs and a base extending substantially horizontally between the side legs, the side legs of the rear bow member being respectively mounted to the side legs of said safety bar portion for pivotal movement relative thereto about a first, fixed pivotal axis between a collapsed portion with said base adjacent the rearward panel and a raised portion with said base spaced from and above said rearward panel, and the side legs of said front bow member being respectively mounted to the side legs of said rear bow member for pivotal movement relative to said safety bar portion and said rear bow member about a second pivotal axis, said second pivotal axis being substantially parallel to and spaced from said first, fixed pivotal axis, the side legs of said front bow member being movable with the respective

40 side legs of said rear bow member about the first, fixed pivotal axis, said front bow member further being movable between a collapsed position with the base of the inverted U-shape thereof adjacent the rearward panel and the collapsed position of the base of the rear bow member and a raised position with the base of the front bow member adjacent the windshield of the front portion of the vehicle body.

2. The convertible soft top of claim 1 wherein said second pivotal axis is fixed relative to the respective side legs of said rear bow member.

3. The convertible soft top of claim 1 wherein the respective side legs of said front bow member are substantially L-shaped.

5 4. The convertible soft top of claim 3 wherein the respective side legs of said rear bow member have a portion substantially matching the L-shape of the side legs of the front bow member wherein the L-shaped side legs of the front bow member and the L-shaped portion of the side legs of the rear bow member are substantially aligned and adjacent one another in the respective collapsed positions of the front and rear bow members.

5 5. The convertible soft top of claim 4 wherein the sections of each L-shaped side leg of the front bow member extend along respective axes and said axes intersect one another at an angle greater than 90 degrees.

6. The convertible soft top of claim 5 wherein said angle is about 120 degrees.

7. The convertible soft top of claim 3 wherein the sections of each L-shaped side leg of the front bow member extend along respective axes and said axes intersect one another at an angle greater than 90 degrees.

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8. The convertible soft top of claim 7 wherein said angle is about 120 degrees.

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9. The convertible soft top of claim 1 wherein said frame further includes an additional bow member having an inverted, substantially U-shape with side legs and a base extending substantially horizontally between said side legs, the side legs of said additional bow member being respectively mounted to the side legs of the rear bow member for pivotal movement about a third pivotal axis, said third pivotal axis being substantially parallel to said first and second pivotal axes and being positioned along the respective side legs of said rear bow member substantially between said second axis and the base of said rear bow member, said additional bow member being movable about said third pivotal axis between a collapsed position with the base of the inverted U-shape thereof adjacent the base of the collapsed rear bow member and a raised position with the base of the additional bow member spaced from the base of the raised rear bow member toward the front portion of the vehicle body.

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10. The convertible soft top of claim 1 wherein the respective side legs of said front bow member are substantially L-shaped and the vehicle has a door frame between the front and rear portions of the vehicle body and said door frame has a substantially horizontal, upper section extending substantially rearwardly from adjacent said

10 windshield and wherein at least one section of the L-shape of at least one of the side legs of the front bow member is releasably securable to the door frame with the one section of the side leg substantially aligned with the horizontal upper section of the door frame.

11. The convertible soft top of claim 10 wherein the base of the inverted U-shape of the front bow member is releasably securable to the windshield.

5 12. The convertible soft top of claim 1 wherein said vehicle further includes a door frame and said convertible soft top further includes an arrangement for automatically securing at least one side leg of the front bow member to said door frame as said front bow member is moved between said collapsed and raised positions.

13. The convertible soft top of claim 1 wherein the base of the inverted U-shape of the front bow member is releasably securable to the windshield.

5 14. The convertible soft top of claim 13 wherein the base of the inverted U-shape of the front bow member includes a header section and at least one clamp assembly pivotally mounted to said header and releasably securable to the windshield.

5 15. The convertible soft top of claim 1 wherein each of the respective side legs of the front bow member in said raised position has a section extending substantially horizontally and each section has first and second segments, said first segment being mounted to the base of the front

10 bow member and being attached to the second segment
 of the respective side leg for pivotal movement
 about a third axis, said base being selectively
 pivotable about said third pivotal axis between a
 closed position with the base of the front bow
 member substantially adjacent the windshield and an
 open position with said base spaced from said
 windshield and adjacent the second segments of the
15 side legs to create an open portion in said soft top
 adjacent the windshield.

5 16. The convertible soft top of claim 15
 wherein the vehicle has a door frame and wherein the
 second segment of at least one of said side legs of
 the front bow member is releasably securable to the
 door frame.

5 17. The convertible soft top of claim 16
 wherein said first and second segments extend
 substantially in an aligned relationship along a
 common longitudinal axis in the closed position of
 the base of the front bow member and said
 convertible soft top further includes an arrangement
 to selectively maintain said first and second
 segments in said aligned relationship.

5 18. The convertible soft top of claim 17
 wherein said arrangement includes a sleeve member
 mounted for sliding movement along said longitudinal
 axis between a position covering the third pivotal
 axis and maintaining said first and second segments
 in said aligned relationship and a position
 uncovering the third pivotal axis to permit the base
 of said front bow member to be pivoted about the
 third axis relative to said second segment to said
10 open position.

19. The convertible soft top of claim 18 wherein said arrangement further includes a mechanism for releasably locking said sleeve member in said covering position.

20. The convertible soft top of claim 15 wherein said first and second segments extend substantially along a common longitudinal axis in the closed position of the base of the front bow member and said convertible soft top further includes a mechanism for releasably locking said first and second segments in said aligned relationship with said front bow member in said raised and collapsed positions.

21. The convertible soft top of claim 15 wherein the base of the inverted U-shape of the front bow member includes a header section and at least one clamp assembly pivotally mounted to said header section and releasably securable to the windshield.

22. The convertible soft top of claim 21 wherein said pivotally mounted clamp assembly is releasably securable to said header section in a fixed position relative thereto with said base of said front bow member in said open position.

23. The convertible soft top of claim 22 wherein said windshield and said header section respectively include a recess therein and said clamp assembly includes a hook member selectively receivable in the recess in said windshield and the recess in said header section.

24. A convertible soft top for a vehicle, the vehicle having a body with front and rear portions

5 spaced from each other along a longitudinal axis, said front portion having an upstanding windshield and said rear portion having side panels and a rearward panel, said convertible soft top including:

10 a foldable, collapsible frame and a flexible fabric attached thereto, said frame including at least a front bow member having an inverted, substantially U-shape with side legs and a base extending substantially horizontally between the side legs, the side legs of the front bow member being mounted for pivotal movement relative to said vehicle about a first axis between a collapsed position with the base thereof adjacent the rearward panel and a raised position with said base adjacent the windshield of the front portion of the vehicle body, and

15 20 said vehicle further includes a door frame and said convertible soft top further includes an arrangement for automatically securing at least one side leg of the front bow member to said door frame as said front bow member is moved between said collapsed and raised positions.

25. The convertible soft top of claim 24 wherein said securing arrangement includes a block member mounted on said one side leg of the front bow member and a receiving member with two upstanding legs spaced from one another mounted on said door frame to receive said block member between said upstanding legs.

5 26. The convertible soft top of claim 25 wherein said block member includes a beveled surface aligned to selectively contact one of said upstanding legs of said receiving member as said front bow member is moved between said collapsed and

raised positions to guide the block member between the upstanding legs of said receiving member.

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27. The convertible soft top of claim 25 wherein said receiving member includes a retractable plunger with an end portion, said plunger being mounted to one leg of said receiving member, said block member having a recess to selectively receive the end portion of said plunger to secure said block member and said at least one side leg of the front bow member to said door frame.

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28. The convertible soft top of claim 27 further including a spring to bias said plunger to extend the end portion thereof through said one leg of the receiving member to a first position, said block member including a beveled surface adjacent said recess, said beveled surface being aligned to contact the end portion of said plunger as said front bow member is moved between said collapsed and raised positions to retract the end portion of the plunger from said first position against the force of the spring biasing the plunger toward said first position, said plunger moving to said first position under the force of the spring upon alignment of the end portion thereof with the recess in said block member.

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29. The convertible soft top of claim 28 wherein said block member further includes a surface with an inverted, substantially V-shape adjacent said beveled surface to selectively contact and aid in guiding the end portion of said plunger into alignment with the recess of said block member as said front bow member is moved between said collapsed and raised positions.

30. A convertible soft top for a vehicle, the vehicle having a body with front and rear portions spaced from each other along a longitudinal axis, said front portion having an upstanding windshield and said rear portion having side panels and a rearward panel, said convertible soft top including:

5 a foldable, collapsible frame and a flexible fabric attached thereto, said frame including at least a front bow member having an inverted, substantially U-shape with side legs and a base extending substantially horizontally between the side legs, the side legs of the front bow member being mounted for pivotal movement relative to said vehicle about a first axis between a collapsed position with the base thereof adjacent the rearward panel and a raised position with said base adjacent the windshield of the front portion of the vehicle body, and

10 the base of the inverted U-shape of the front bow member including a header section and at least one clamp assembly pivotally mounted to said header section and releasably securable to the windshield, said pivotally mounted clamp assembly further being releasably securable to said header section in a 15 fixed position relative thereto.

20 31. The convertible soft top of claim 30 wherein each of the respective side legs of the front bow member in said raised position has a section extending substantially horizontally and each section has first and second segments, said 25 first segment being mounted to the base of the front bow member and being attached to the second segment of the respective side leg for pivotal movement about a second axis, said base being selectively pivotable about said second pivotal axis between a 10 closed position with the base of the front bow

15 member substantially adjacent the windshield and an open position with said base spaced from said windshield and adjacent the second segments of the side legs to create an open portion in said soft top adjacent the windshield, said clamp assembly being selectively securable to said windshield with said base in said closed position and to the header section of said base with said base in said open
20 position.

32. The convertible soft top of claim 31 wherein the vehicle has a door frame and wherein the second segment of at least one of said side legs of the front bow member is releasably securable to the door frame.

5 33. The convertible soft top of claim 31 wherein said first and second segments extend substantially along a common longitudinal axis in the closed position of the base of the front bow member and said convertible soft top further includes a mechanism for releasably locking said first and second segments in said aligned relationship with said front bow member in said raised and collapsed positions.

5 34. A soft top for a vehicle, the vehicle having a body with front and rear portions spaced from each other along a longitudinal axis, said front portion having an upstanding windshield, said soft top including:

a frame and a flexible fabric attached thereto, said frame including at least a front bow member with side legs and a base extending substantially horizontally between the side legs and
10 the base of the front bow member including a header section and at least one clamp assembly

15 pivotally mounted to said header and releasably securable to the windshield, said pivotally mounted clamp assembly further being releasably securable to said header section in a fixed position relative thereto wherein each of the respective side legs of the front bow member has a section extending substantially horizontally and each section has first and second segments, said first segment being mounted to the base of the front bow member and being attached to the second segment of the respective side leg for pivotal movement about a second axis, said base being selectively pivotable about said second pivotal axis between a closed position with the base of the front bow member substantially adjacent the windshield and an open position with said base spaced from said windshield and adjacent the second segments of the side legs to create an open portion in said soft top adjacent the windshield, said clamp assembly being selectively securable to said windshield with said base in said closed position and to the header section of said base with said base in said open position.

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35. The soft top of claim 34 wherein said windshield and said header section respectively include a recess therein and said clamp assembly includes a hook member selectively receivable in the recess in said windshield and the recess in said header section.

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36. The soft top of claim 34 wherein said first and second segments extend substantially in an aligned relationship along a common longitudinal axis in the closed position of the base of the front bow member and said convertible soft top further includes an arrangement to selectively maintain said

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first and second segments in said aligned relationship.

37. The soft top of claim 36 wherein said arrangement includes a sleeve member mounted for sliding movement along said longitudinal axis between a position covering the second pivotal axis and maintaining said first and second segments in said aligned relationship and a position uncovering the second pivotal axis to permit the base of said front bow member to be pivoted about the second axis relative to said second segment to said open position.

38. The soft top of claim 37 wherein said arrangement further includes a mechanism for releasably locking said sleeve member in said covering position.

39. The soft top of claim 34 wherein the rear portion of said vehicle body has side panels and a rearward panel and the side legs of the front bow member are mounted for pivotal movement relative to said vehicle about a first axis between a collapsed position with the base thereof adjacent the rearward panel and a raised position with said base adjacent the windshield of the front portion of the vehicle body.

40. A soft top for a vehicle, the vehicle having a body with front and rear portions spaced from each other along a longitudinal axis, said front portion having an upstanding windshield, said soft top including:

a frame and a flexible fabric attached thereto, said frame including at least a front bow member with side legs and a base extending substantially

10 horizontally between the side legs, each of said side legs of the front bow member having a section extending substantially horizontally with each section having first and second segments, said first segment being mounted to the base of the front bow member and being attached to the second segment of
15 the respective side leg for pivotal movement about an axis, said base and said first segments being selectively pivotable about said axis between a closed position with the base of the front bow member substantially adjacent the windshield and an open position with said base spaced from said windshield and adjacent the second segments of the side legs to create an open portion in said soft top adjacent the windshield, and

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25 said first and second segments extend along a common longitudinal axis in the closed position of the base of the front bow member and said soft top further includes an arrangement having a mechanism for releasably locking said first and second segments in said aligned relationship.

41. The soft top of claim 40 wherein said arrangement further includes a sleeve member mounted about at least one of the first and second segments for sliding movement relative thereto along said common longitudinal axis with the first and second segments in said closed position, said sleeve member including a recessed portion and said locking mechanism including a detent selectively receivable in said recessed portion.

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42. The soft top of claim 41 wherein said detent is mounted on one of said segments.

43. The soft top of claim 41 wherein said arrangement includes a spring member biasing said

detent toward an extended position receivable in said recessed portion.

44. The soft top of claim 41 wherein said detent creates a signal as the detent is received in said recessed portion.

45. The soft top of claim 40 wherein said arrangement includes a sleeve member mounted for sliding movement along said longitudinal axis between a position covering the second pivotal axis and maintaining said first and second segments in said aligned relationship and a position uncovering the second pivotal axis to permit the base of said front bow member to be pivoted about the second axis relative to said second segment to said open position and said locking mechanism releasably locks said sleeve member in said covering position.

46. The soft top of claim 45 wherein said sleeve member includes first and second recessed portions spaced from each other along an axis, said recessed portions being separated by a protruding member, said locking mechanism including a detent selectively receivable in said first and second recessed portions, said detent being mounted on one of said segments, said arrangement including a spring member biasing said detent away from a retracted position and toward an extended position selectively receivable in said recessed portions, said detent being received in said first recessed portion to lock said sleeve member in said covering position wherein movement of said sleeve member along said longitudinal axis between said covering and uncovering positions will cause said protruding member to contact and move said detent to said retracted position allowing said protruding member

20 to pass by said detent and said detent to be received in said second recessed portion.

5 47. The soft top of claim 40 wherein the rear portion of said vehicle body has side panels and a rearward panel and the side legs of the front bow member are mounted for pivotal movement relative to said vehicle about a first axis between a collapsed position with the base thereof adjacent the rearward panel and a raised position with said base adjacent the windshield of the front portion of the vehicle body.

10 48. A convertible soft top for a vehicle, the vehicle having a body with front and rear portions spaced from each other along a longitudinal axis, said rear portion having side panels and a rearward panel, said vehicle further having a safety bar arrangement with a portion thereof having an inverted, substantially U-shape with the side legs of said inverted U-shape extending substantially vertically upward from the vehicle body adjacent the rear portion thereof and the base of the inverted U-shape extending between the side legs substantially horizontally across the vehicle body and longitudinal axis adjacent the rear portion of the vehicle body, said convertible soft top including:

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20 a foldable, collapsible frame and a flexible fabric attached thereto, said frame including at least a rear bow member having an inverted, substantially U-shape with side legs and a base extending substantially horizontally between the side legs, the side legs of the rear bow member being respectively mounted to the side legs of said safety bar portion for pivotal movement relative thereto about a first, fixed pivotal axis between a collapsed portion with said base adjacent the

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rearward panel and a raised portion with said base spaced from and above said rearward panel, and

5 wherein said frame further includes an additional bow member having an inverted, substantially U-shape with side legs and a base extending substantially horizontally between said side legs, the side legs of said additional bow member being respectively mounted to the side legs of the rear bow member for pivotal movement about a second pivotal axis, said second pivotal axis being substantially parallel to said first pivotal axis and being positioned along the respective side legs of said rear bow member substantially between said first axis and the base of said rear bow member,
10 15 said additional bow member being movable about said second pivotal axis between a collapsed position with the base of the inverted U-shape thereof adjacent the base of the collapsed rear bow member and a raised position with the base of the additional bow member spaced from the base of the raised rear bow member toward the front portion of
20 the vehicle body.